UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,980	09/08/2004	Alain Delache	062221	8796

38834 7590 09/28/2007

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER	
MATTER, KRISTEN CLARETTE	

ART UNIT	PAPER NUMBER
3771	

MAIL DATE	DELIVERY MODE
09/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/506,980	DELACHE ET AL.	
	Examiner	Art Unit	
	Kristen C. Matter	3771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Action is in response to the amendment filed on 8/16/2007. Claims 21-30 and 32-40 have been amended. Claims 1-20 were previously cancelled. Currently, claims 21-40 are pending in the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 6,066,101) in view of Berthon-Jones (US 6,152,129). Johnson et al. discloses an airflow perturbation device and system comprising a shell (5) with a traversing hole (11) having a known resistance coefficient connected to a tube connected to a mouthpiece (see Figure 7), a first pressure sensor (4) for measuring mouth pressure, a second pressure sensor (2) for measuring airflow, and a control unit (computer). Addition of the term "calibrating shell" adds no new structural limitation to the claim. Johnson et al. is silent as to the airflow being generated by a blower. Berthon-Jones discloses a device for determining leak and respiratory airflow comprising a blower (14) and a differential pressure sensor located on an opposite side of a pneumotachograph as a first pressure sensor. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided Johnson et al.'s device with a blower as taught by Berthon-Jones's for determining airflow resistance in patient's not able to

comply with instructions (i.e., neonates, comatose patients). Furthermore, because Berthon-Jones's discloses a pneumotach already, it appears as though both devices would perform equally well in combination, and by providing Berthon-Jones's device with Johnson et al.'s device, airflow resistance could be calculated in addition to airflow alone in order to help evaluate respiratory disorders.

Claims 22-24, 29-34, 37, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. and Berthon-Jones (US 6,152,129) as applied to claim 21 above, and further in view of More (US 2004/0102914).

Regarding claims 22-24 and 38, the modified Johnson et al. reference is silent as to an offset compensation means for compensating possible differences of gauging between the two pressure sensors. However, More discloses a method and apparatus for drift compensation for use in pressure sensors (paragraph 0018). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the modified Johnson et al. device with additional offset compensation means for taking into account possible drift factors for temperature or overuse.

Regarding claim 30, Berthon-Jones discloses that the apparatus can be used in multi-level or autosetting treatment devices (i.e., Bi-PAP), which would inherently have a means for determining when a patient is inspiring or expiring (see column 8, lines 25-30).

Regarding claims 29, 31, and 32, Johnson et al. disclose a storage means for storing a plurality of sets of data over a period of time (see column 8, lines 15-20) and that adjustments to

the resistance can be adjusted via an automatic feedback system based off of input to the computer regarding device and respiratory resistance data (see column 10, lines 10-20).

Regarding claims 33 and 34, Berthon-Jones device is capable of determining when a leak occurs, which is considered an event, or such as a change in inspiration/expiration in accordance with the multi-level treatment device.

Regarding claim 37, Berthon-Jones discloses that controller (42) receives information from microcontroller (38) and outputs a voltage to the motor (16) of the blower (see Figure 2a). Although Berthon-Jones does mot explicitly discloses a FSK or a power source, his device is capable of transmitting voltage changes from binary data and the electric motor inherently has some sort of power supply.

Regarding claims 39 and 40, the modified device of Johnson et al. has all of the structural limitations recited in claims 39 and 40 and is fully capable of performing the recited process. It would have been obvious to one of ordinary skill in the art at the time the invention was made, upon seeing the modified device, to perform the claimed steps in order to calibrate the device.

Claim 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al., Berthon-Jones, and More as applied to claim 23 above and further in view of Hoffman (US 6,287,264).

Regarding claim 25, More does not specifically disclose an analog subtractor (although D/A converters [0189] and processors [0049] are disclosed) in the offset compensation means. However, Hoffman discloses a system for measuring respiratory function comprising pressure differential measurements, a pneumotachograph, and a controller with analog to digital (A/D)

converters (680) and an analog subtractor (670) for processing the pressure signals (see column 9, line 45-column 10, line 15). Johnson et al. also disclose A/D converters for processing the pressure signals. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the modified device of Johnson et al. with an analog subtractor as taught by Hoffman for subtracting out unwanted analog flow measurements during digital processing of the data and because these types of signal processing components are well known in the art.

Regarding claims 26 and 27, Johnson et al. discloses amplifiers and A/D converters connected between the computer and pressure sensors for use in processing said signals.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al., Berthon-Jones, and More as applied to claim 23 above and further in view of Orr et al. (US 2006/0117856). Johnson et al. is silent as to a filter. However, Orr et al. disclose a pressure transducer pneumotach with filters (29, 39) allowing resistance that is complimentary configured into the pressure transducers (i.e., a resistance coefficient would be known) connected to a ventilator and a computer (see paragraphs 32-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the modified device of Johnson et al. with filters as taught by Orr et al. in order to prevent contamination of the pressure transducers from particulates.

Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al., Berthon-Jones, and More as applied to claim 23 above and further in view of Estes et al. (US 5,551,418).

Regarding claim 35, Berthon-Jones does not disclose the specifics of changing blower speed with inspiration and exhalation. However, Estes et al. discloses a bi-PAP system that supplies higher pressure during inhalation and a lower pressure during exhalation (column 12, lines 40-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the modified Johnson et al. device with a bi-PAP system as taught by Estes et al. for increasing the comfort of the patient during breathing.

Regarding claim 36, Berthon-Jones does not disclose a starting means for determining when breathing activity is detected. Estes et al. disclose an automatic ON//OFF mechanism that detects the presence and absence of the patient (column 6, lines 5-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the modified Johnson et al. device with an automatic ON/OFF mechanism as taught by Estes et al. in order to not waste power or air supply when it is unneeded.

Response to Arguments

Applicant's arguments filed 8/16/2007 regarding the modified Johnson et al. device not disclosing a pressure measurement at the output of a blower have been fully considered but they are not persuasive. Examiner points applicant to Figure 2a of Berthon-Jones in which the pressure sensor (P1) is shown measuring a pressure at the output of the blower (as opposed to the input). In addition, it appears that the exhaust is only open during exhalation.

Applicant's arguments filed 8/16/2007 with respect to the offset compensation means have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of More, in which offset compensation means are well known for use in systems with less expensive pressure transducers.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Turner and Danninger are cited to show other offset compensation means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristen C. Matter whose telephone number is (571) 272-5270. The examiner can normally be reached on Monday - Friday 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCMatter

Kristen C. Matter
Examiner
Art Unit 3771

JUSTINE R. YU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700
9/26/07